

CLAIMS

1. A frequency converter comprising:
 - a signal branching means that branches a locally oscillated signal into two signals;
 - a constant impedance element that passes the two signals; and
 - a mixing means that respectively mixes an output from said constant impedance element with a high frequency received signal and generates an intermediate frequency signal,wherein said constant impedance element have a generally constant impedance in a frequency band of the high frequency received signal.
2. The frequency converter according to claim 1, wherein the two signals are two signals that are different from each other in phase by 180 degrees, and have the same amplitudes.
3. The frequency converter according to claim 1 or 2, wherein an impedance of said constant impedance element is generally $0\ \Omega$ across almost an entire frequency band of the high frequency received signal.
4. The frequency converter according to any one of claims 1 to 3, wherein said constant impedance element passes a signal with a frequency within the frequency band of the respective two signals more than a signal within the frequency band of the high frequency received signal.
5. The frequency converter according to claim 4, wherein said constant impedance element is a low-pass filter whose cut-off frequency is an upper limit of the frequency band of the two signals.

6. The frequency converter according to claim 4, wherein said constant impedance element is a band-pass filter whose passband is the frequency band of the two signals.

7. The frequency converter according to claim 4, wherein said constant impedance element is a diplexer whose passband is the frequency band of the two signals, and which presents a termination characteristic in the frequency band of the high frequency received signal.

8. The frequency converter according to any one of claims 1 to 7, wherein said signal branching means is a balanced balun corresponding to the frequency band of the locally oscillated signal.

9. The frequency converter according to any one of claims 1 to 7, wherein:

said mixing means comprises:

one diode;

the other diode which is connected at the anode to the cathode of said one diode, and at the cathode to the anode of said one diode;

a first terminal to which the cathode of said one diode and the anode of said the other diode are connected; and

a second terminal to which the cathode of said the other diode and the anode of said one diode are connected;

said first terminal receives an output from said constant impedance element;

said second terminal receives the high frequency received signal; and

said second terminal outputs the intermediate frequency signal.

10. The frequency converter according to claim 9, comprises:
- a high frequency input terminal which is connected to said second terminal, and receives an input of the high frequency received signal;
 - an intermediate frequency band filter which is connected to said second terminal, and passes a signal within the frequency band of the intermediate frequency signal; and
 - an intermediate frequency signal output terminal which is connected to said intermediate frequency band filter.